

SEQUENCE LISTING

<110> Human Genome Sciences, Inc.

<120> Human Tumor Necrosis Factor Receptor TR13 and TR14

<130> PF511P1

<140> Unassigned

<141> 2002-01-16

<150> 60/261,960

<151> 2001-01-17

<150> 09/618,570

<151> 2000-07-14

<150> 60/144,087

<151> 1999-07-16

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<151> 1999-07-18

<150> 60/149,712

<151> 1999-08-20

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<170> PatentIn Ver. 2.0

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Ala Gly Glu Lys His Cys His Asn Arg Gly Gly Leu His Phe Arg Met

10

15

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ctt ccc ctg caa acc tgg cac gta tgc aga caa gca ggg ctc ctc ttt 150
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35

40

ctg caa act ttg ccc agc aac tct tat tca aat aaa gga gaa act tct 198
Leu Gln Thr Leu Pro Ser Asn Ser Tyr Ser Asn Lys Gly Glu Thr Ser

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tgc cac cag tgt gac cct gac aaa tac tca gag aaa gga tct tct tcc 246

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Cys Asn Val Arg Pro Ala Cys Thr Asp Lys Asp Tyr Phe Tyr Thr His
75 80 85

acg gcc tgc gat gcc aac gga gag aca caa ctc atg tac aaa tgg gcc 342
Thr Ala Cys Asp Ala Asn Gly Glu Thr Gln Leu Met Tyr Lys Trp Ala
90 95 100

aag ccg aaa atc tgt agc gag gac ctt gag ggg gca gtg aag ctg cct 390
Lys Pro Lys Ile Cys Ser Glu Asp Leu Glu Gly Ala Val Lys Leu Pro
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gcc tct ggt gtg aag acc cac tgc cca ccc tgc aac cca ggc ttc ttc 438
Ala Ser Gly Val Lys Thr His Cys Pro Pro Cys Asn Pro Gly Phe Phe
125 130 135

aaa acc aac aac agc acc tgc cag ccc tgc cca tat ggt tcc tac tcc 486
Lys Thr Asn Asn Ser Thr Cys Gln Pro Cys Pro Tyr Gly Ser Tyr Ser
140 145 150

aat ggc tca gac tgt acc cgc tgc cct gca ggg act gaa cct gct gtg 534
Asn Gly Ser Asp Cys Thr Arg Cys Pro Ala Gly Thr Glu Pro Ala Val
155 160 165

gga ttt gaa tac aaa tgg tgg aac acg ctg ccc aca aac atg gaa acg 582
Gly Phe Glu Tyr Lys Trp Trp Asn Thr Leu Pro Thr Asn Met Glu Thr
170 175 180

acc gtt ctc agt ggg atc aac ttc gag tac aag ggc atg aca ggc tgg 630
Thr Val Leu Ser Gly Ile Asn Phe Glu Tyr Lys Gly Met Thr Gly Trp
185 190 195 200

gag gtg gct ggt gat cac att tac aca gct gct gga gcc tca gac aat 678
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gac ttc atg att ctc act ctg gtt gtg cca gga ttt aga cct ccg cag 726
Asp Phe Met Ile Leu Thr Leu Val Val Pro Gly Phe Arg Pro Pro Gln
220 225 230

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Ser Val Met Ala Asp Thr Glu Asn Lys Glu Val Ala Arg Ile Thr Phe
235 240 245

gtc ttt gag acc ctc tgt tct gtg aac tgt gag ctc tac ttc atg gtg 822
Val Phe Glu Thr Leu Cys Ser Val Asn Cys Glu Leu Tyr Phe Met Val
250 255 260

ggt gtg aat tct agg acc aac act cct gtg gag acg tgg aaa ggt tcc 870
Gly Val Asn Ser Arg Thr Asn Thr Pro Val Glu Thr Trp Lys Gly Ser
265 270 275 280

aaa ggc aaa cag tcc tat acc tac atc att gag gag aac act acc acg 918
Lys Gly Lys Gln Ser Tyr Thr Tyr Ile Ile Glu Glu Asn Thr Thr Thr
285 290 295

agc ttc acc tgg gcc ttc cag agg acc act ttt cat gag gca agc agg 966

Ser Phe Thr Trp Ala Phe Gln Arg Thr Thr Phe His Glu Ala Ser Arg 310
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 aag tac acc aat gac gtt gcc aag atc tac tcc atc aat gtc acc aat 1014
 Lys Tyr Thr Asn Asp Val Ala Lys Ile Tyr Ser Ile Asn Val Thr Asn 325
 315 320
 gtt atg aat ggc gtg gcc tcc tac tgc cgt ccc tgt gcc cta gaa gcc 1062
 Val Met Asn Gly Val Ala Ser Tyr Cys Arg Pro Cys Ala Leu Glu Ala 340
 330 335
 tct gat gtg ggc tcc tcc tgc acc tct tgt cct gct ggt tac tat att 1110
 Ser Asp Val Gly Ser Ser Cys Thr Ser Cys Pro Ala Gly Tyr Tyr Ile 360
 345 350 355
 gac cga gat tca gga acc tgc cac tcc tgc ccc cct aac aca att ctg 1158
 Asp Arg Asp Ser Gly Thr Cys His Ser Cys Pro Pro Asn Thr Ile Leu 375
 365 370
 aaa gcc cac cag cct tat ggt gtc cag gcc tgt gtg ccc tgt ggt cca 1206
 Lys Ala His Gln Pro Tyr Gly Val Gln Ala Cys Val Pro Cys Gly Pro 390
 380 385
 ggg acc aag aac aac aag atc cac tct ctg tgc tac aat gat tgc acc 1254
 Gly Thr Lys Asn Asn Lys Ile His Ser Leu Cys Tyr Asn Asp Cys Thr 405
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 Phe Ser Arg Asn Thr Pro Thr Arg Thr Phe Asn Tyr Asn Phe Ser Ala 420
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 ttg gca aac acc gtc act ctt gct gga ggg cca agc ttc act tcc aaa 1350
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 425 430 435
 ggg ttg aaa tac ttc cat cac ttt acc ctc agt ctc tgt gga aac cag 1398
 Gly Leu Lys Tyr Phe His His Phe Thr Leu Ser Leu Cys Gly Asn Gln 455
 445 450
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 Gly Arg Lys Met Ser Val Cys Thr Asp Asn Val Thr Asp Leu Arg Ile 470
 460 465
 cct gag ggt gag tca ggg ttc tcc aaa tct atc aca gcc tac gtc tgc 1494
 Pro Glu Gly Glu Ser Gly Phe Ser Lys Ser Ile Thr Ala Tyr Val Cys 485
 475 480
 cag gca gtc atc atc ccc cca gag gtg aca ggc tac aag gcc ggg gtt 1542
 Gln Ala Val Ile Ile Pro Pro Glu Val Thr Gly Tyr Lys Ala Gly Val 500
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 tcc tca cag cct gtc agc ctt gct gat cga ctt att ggg gtg aca aca 1590
 Ser Ser Gln Pro Val Ser Leu Ala Asp Arg Leu Ile Gly Val Thr Thr 520
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 gat atg act ctg gat gga atc acc tcc cca gct gaa ctt ttc cac ctg 1638
 Asp Met Thr Leu Asp Gly Ile Thr Ser Pro Ala Glu Leu Phe His Leu 535
 525 530
 gag tcc ttg gga ata ccg gac gtg atc ttc ttt tat agg tcc aat gat 1686
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Glu Ser Leu Gly Ile Pro Asp Val Ile Phe Phe Tyr Arg Ser Asn Asp	540	545	550	
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Val Thr Gln Ser Cys Ser Ser Gly Arg Ser Thr Thr Ile Arg Val Arg	555	560	565	
tgc agt cca cag aaa act gtc cct gga agt ttg ctg ctg cca gga acg				1782
Cys Ser Pro Gln Lys Thr Val Pro Gly Ser Leu Leu Leu Pro Gly Thr	570	575	580	
tgc tca gat ggg acc tgt gat ggc tgc aac ttc cac ttc ctg tgg gag				1830
Cys Ser Asp Gly Thr Cys Asp Gly Cys Asn Phe His Phe Leu Trp Glu	585	590	595	600
agc gcg gct gct tgc ccg ctc tgc tca gtg gct gac tac cat gct atc				1878
Ser Ala Ala Ala Cys Pro Leu Cys Ser Val Ala Asp Tyr His Ala Ile	605		610	615
gtc agc agc tgt gtg gct ggg atc cag aag act act tac gtg tgg cga				1926
Val Ser Ser Cys Val Ala Gly Ile Gln Lys Thr Thr Tyr Val Trp Arg	620	625	630	
gaa ccc aag cta tgc tct ggt ggc att tct ctg cct gag cag aga gtc				1974
Glu Pro Lys Leu Cys Ser Gly Gly Ile Ser Leu Pro Glu Gln Arg Val	635	640	645	
acc atc tgc aaa acc ata gat ttc tgg ctg aaa gtg ggc atc tct gca				2022
Thr Ile Cys Lys Thr Ile Asp Phe Trp Leu Lys Val Gly Ile Ser Ala	650	655	660	
ggc acc tgt act gcc atc ctg ctc acc gtc ttg acc tgc tac ttt tgg				2070
Gly Thr Cys Thr Ala Ile Leu Leu Thr Val Leu Thr Cys Tyr Phe Trp	665	670	675	680
aaa aag aat caa aaa cta gag tac aag tac tcc aag ctg gtg atg aat				2118
Lys Lys Asn Gln Lys Leu Glu Tyr Lys Tyr Ser Lys Leu Val Met Asn	685		690	695
gct act ctc aag gac tgt gac ctg cca gca gct gac agc tgc gcc atc				2166
Ala Thr Leu Lys Asp Cys Asp Leu Pro Ala Ala Asp Ser Cys Ala Ile	700	705	710	
atg gaa ggc gag gat gta gag gac gac ctc atc ttt acc agc aag aat				2214
Met Glu Gly Glu Asp Val Glu Asp Asp Leu Ile Phe Thr Ser Lys Asn	715	720	725	
cac tct ttg gga aga tca aat cat tta cct cca aga gga ctc ctg atg				2262
His Ser Leu Gly Arg Ser Asn His Leu Pro Pro Arg Gly Leu Leu Met	730	735	740	
gat ttg act cag tgc cgc tga agacatcctc aggaggccca gacatggacc				2313
Asp Leu Thr Gln Cys Arg	745	750		
tgtgagaggc actgcctgcc tcacctgcct cctcaccttg catagcacct ttgcaagcct				2373
gcggcgattt ggggtgccagc atcctgcaac acccactgct ggaaatctct tcattgtggc				2433
cttatcagat gtttgaattt cagatctttt tttatagagt acccaaacc tcttttctgc				2493

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2554

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<213> Homo sapiens

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Cys Arg Gln Ala Gly Leu Leu Phe Leu Gln Thr Leu Pro Ser Asn Ser
35 40 45

Tyr Ser Asn Lys Gly Glu Thr Ser Cys His Gln Cys Asp Pro Asp Lys
50 55 60

Tyr Ser Glu Lys Gly Ser Ser Ser Cys Asn Val Arg Pro Ala Cys Thr
65 70 75 80

Asp Lys Asp Tyr Phe Tyr Thr His Thr Ala Cys Asp Ala Asn Gly Glu
85 90 95

Thr Gln Leu Met Tyr Lys Trp Ala Lys Pro Lys Ile Cys Ser Glu Asp
100 105 110

Leu Glu Gly Ala Val Lys Leu Pro Ala Ser Gly Val Lys Thr His Cys
115 120 125

Pro Pro Cys Asn Pro Gly Phe Phe Lys Thr Asn Asn Ser Thr Cys Gln
130 135 140

Pro Cys Pro Tyr Gly Ser Tyr Ser Asn Gly Ser Asp Cys Thr Arg Cys
145 150 155 160

Pro Ala Gly Thr Glu Pro Ala Val Gly Phe Glu Tyr Lys Trp Trp Asn
165 170 175

Thr Leu Pro Thr Asn Met Glu Thr Thr Val Leu Ser Gly Ile Asn Phe
180 185 190

Glu Tyr Lys Gly Met Thr Gly Trp Glu Val Ala Gly Asp His Ile Tyr
195 200 205

Thr Ala Ala Gly Ala Ser Asp Asn Asp Phe Met Ile Leu Thr Leu Val
210 215 220

Val Pro Gly Phe Arg Pro Pro Gln Ser Val Met Ala Asp Thr Glu Asn
225 230 235 240

Lys Glu Val Ala Arg Ile Thr Phe Val Phe Glu Thr Leu Cys Ser Val
245 250 255

Asn Cys Glu Leu Tyr Phe Met Val Gly Val Asn Ser Arg Thr Asn Thr
260 265 270

Pro Val Glu Thr Trp Lys Gly Ser Lys Gly Lys Gln Ser Tyr Thr Tyr
275 280 285

Ile Ile Glu Glu Asn Thr Thr Thr Ser Phe Thr Trp Ala Phe Gln Arg
290 295 300

Thr Thr Phe His Glu Ala Ser Arg Lys Tyr Thr Asn Asp Val Ala Lys
305 310 315 320

Ile Tyr Ser Ile Asn Val Thr Asn Val Met Asn Gly Val Ala Ser Tyr
325 330 335

Cys Arg Pro Cys Ala Leu Glu Ala Ser Asp Val Gly Ser Ser Cys Thr
340 345 350

Ser Cys Pro Ala Gly Tyr Tyr Ile Asp Arg Asp Ser Gly Thr Cys His
355 360 365

Ser Cys Pro Pro Asn Thr Ile Leu Lys Ala His Gln Pro Tyr Gly Val
370 375 380

Gln Ala Cys Val Pro Cys Gly Pro Gly Thr Lys Asn Asn Lys Ile His
385 390 395 400

Ser Leu Cys Tyr Asn Asp Cys Thr Phe Ser Arg Asn Thr Pro Thr Arg
405 410 415

Thr Phe Asn Tyr Asn Phe Ser Ala Leu Ala Asn Thr Val Thr Leu Ala
420 425 430

Gly Gly Pro Ser Phe Thr Ser Lys Gly Leu Lys Tyr Phe His His Phe
435 440 445

Thr Leu Ser Leu Cys Gly Asn Gln Gly Arg Lys Met Ser Val Cys Thr
450 455 460

Asp Asn Val Thr Asp Leu Arg Ile Pro Glu Gly Glu Ser Gly Phe Ser
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Lys Ser Ile Thr Ala Tyr Val Cys Gln Ala Val Ile Ile Pro Pro Glu
485 490 495

Val Thr Gly Tyr Lys Ala Gly Val Ser Ser Gln Pro Val Ser Leu Ala
500 505 510

Asp Arg Leu Ile Gly Val Thr Thr Asp Met Thr Leu Asp Gly Ile Thr
515 520 525

Ser Pro Ala Glu Leu Phe His Leu Glu Ser Leu Gly Ile Pro Asp Val
530 535 540

Ile Phe Phe Tyr Arg Ser Asn Asp Val Thr Gln Ser Cys Ser Ser Gly
545 550 555 560

Arg Ser Thr Thr Ile Arg Val Arg Cys Ser Pro Gln Lys Thr Val Pro
565 570 575

Gly Ser Leu Leu Leu Pro Gly Thr Cys Ser Asp Gly Thr Cys Asp Gly
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Cys Asn Phe His Phe Leu Trp Glu Ser Ala Ala Ala Cys Pro Leu Cys
595 600 605

Ser Val Ala Asp Tyr His Ala Ile Val Ser Ser Cys Val Ala Gly Ile
610 615 620

Gln Lys Thr Thr Tyr Val Trp Arg Glu Pro Lys Leu Cys Ser Gly Gly
625 630 635 640

Ile Ser Leu Pro Glu Gln Arg Val Thr Ile Cys Lys Thr Ile Asp Phe
645 650 655

Trp Leu Lys Val Gly Ile Ser Ala Gly Thr Cys Thr Ala Ile Leu Leu
660 665 670

Thr Val Leu Thr Cys Tyr Phe Trp Lys Lys Asn Gln Lys Leu Glu Tyr
675 680 685

Lys Tyr Ser Lys Leu Val Met Asn Ala Thr Leu Lys Asp Cys Asp Leu
690 695 700

Pro Ala Ala Asp Ser Cys Ala Ile Met Glu Gly Glu Asp Val Glu Asp
705 710 715 720

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Gly Asp Thr Tyr Pro Ser Asn Asp Arg Cys Cys His Glu Cys Arg Pro
35 40 45

Gly Asn Gly Met Val Ser Arg Cys Ser Arg Ser Gln Asn Thr Val Cys
50 55 60

Arg Pro Cys Gly Pro Gly Phe Tyr Asn Asp Val Val Ser Ser Lys Pro
65 70 75 80

Cys Lys Pro Cys Thr Trp Cys Asn Leu Arg Ser Gly Ser Glu Arg Lys
85 90 95

Gln Leu Cys Thr Ala Thr Gln Asp Thr Val Cys Arg Cys Arg Ala Gly
100 105 110

Thr Gln Pro Leu Asp Ser Tyr Lys Pro Gly Val Asp Cys Ala Pro Cys
 115 120 125

Pro Pro Gly His Phe Ser Pro Gly Asp Asn Gln Ala Cys Lys Pro Trp
 130 135 140

Thr Asn Cys Thr Leu Ala Gly Lys His Thr Leu Gln Pro Ala Ser Asn
 145 150 155 160

Ser Ser Asp Ala Ile Cys Glu Asp Arg Asp Pro Pro Ala Thr Gln Pro
 165 170 175

Gln Glu Thr Gln Gly Pro Pro Ala Arg Pro Ile Thr Val Gln Pro Thr
 180 185 190

Glu Ala Trp Pro Arg Thr Ser Gln Gly Pro Ser Thr Arg Pro Val Glu
 195 200 205

Val Pro Gly Gly Arg Ala Val Ala Ala Ile Leu Gly Leu Gly Leu Val
 210 215 220

Leu Gly Leu Leu Gly Pro Leu Ala Ile Leu Leu Ala Leu Tyr Leu Leu
 225 230 235 240

Arg Arg Asp Gln Arg Leu Pro Pro Asp Ala His Lys Pro Pro Gly Gly
 245 250 255

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Thr Leu Ala Lys Ile
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 Val Gln Lys Val Asn Cys Thr Pro Thr Ser Asn Ala Val Cys Gly Asp
 65 70 75 80
 Cys Leu Pro Arg Phe Tyr Arg Lys Thr Arg Ile Gly Gly Leu Gln Asp
 85 90 95
 Gln Glu Cys Ile Pro Cys Thr Lys Gln Thr Pro Thr Ser Glu Val Gln
 100 105 110
 Cys Ala Phe Gln Leu Ser Leu Val Glu Ala Asp Ala Pro Thr Val Pro
 115 120 125
 Pro Gln Glu Ala Thr Leu Val Ala Leu Val Ser Ser Leu Leu Val Val
 130 135 140
 Phe Thr Leu Ala Phe Leu Gly Leu Phe Phe Leu Tyr Cys Lys Gln Phe
 145 150 155 160
 Phe Asn Arg His Cys Gln Arg Gly Gly Leu Leu Gln Phe Glu Ala Asp
 165 170 175
 Lys Thr Ala Lys Glu Glu Ser Leu Phe Pro Val Pro Pro Ser Lys Glu
 180 185 190
 Thr Ser Ala Glu Ser Gln Val Ser Trp Ala Pro Gly Ser Leu Ala Gln
 195 200 205
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 210 215 220
 Glu Met
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 35 40 45
 Thr Ala Gln Met Cys Cys Ser Lys Cys Ser Pro Gly Gln His Ala Lys
 50 55 60
 Val Phe Cys Thr Lys Thr Ser Asp Thr Val Cys Asp Ser Cys Glu Asp
 65 70 75 80

Ser Thr Tyr Thr Gln Leu Trp Asn Trp Val Pro Glu Cys Leu Ser Cys
 85 90 95
 Gly Ser Arg Cys Ser Ser Asp Gln Val Glu Thr Gln Ala Cys Thr Arg
 100 105 110
 Glu Gln Asn Arg Ile Cys Thr Cys Arg Pro Gly Trp Tyr Cys Ala Leu
 115 120 125
 Ser Lys Gln Glu Gly Cys Arg Leu Cys Ala Pro Leu Arg Lys Cys Arg
 130 135 140
 Pro Gly Phe Gly Val Ala Arg Pro Gly Thr Glu Thr Ser Asp Val Val
 145 150 155 160
 Cys Lys Pro Cys Ala Pro Gly Thr Phe Ser Asn Thr Thr Ser Ser Thr
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 Asp Ile Cys Arg Pro His Gln Ile Cys Asn Val Val Ala Ile Pro Gly
 180 185 190
 Asn Ala Ser Arg Asp Ala Val Cys Thr Ser Thr Ser Pro Thr Arg Ser
 195 200 205
 Met Ala Pro Gly Ala Val His Leu Pro Gln Pro Val Ser Thr Arg Ser
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 Gln His Thr Gln Pro Thr Pro Glu Pro Ser Thr Ala Pro Ser Thr Ser
 225 230 235 240
 Phe Leu Leu Pro Met Gly Pro Ser Pro Pro Ala Glu Gly Ser Thr Gly
 245 250 255
 Asp Phe Ala Leu Pro Val Gly Leu Ile Val Gly Val Thr Ala Leu Gly
 260 265 270
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 275 280 285
 Lys Lys Pro Leu Cys Leu Gln Arg Glu Ala Lys Val Pro His Leu Pro
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 Ala Asp Lys Ala Arg Gly Thr Gln Gly Pro Glu Gln Gln His Leu Leu
 305 310 315 320
 Ile Thr Ala Pro Ser Ser Ser Ser Ser Ser Leu Glu Ser Ser Ala Ser
 325 330 335
 Ala Leu Asp Arg Arg Ala Pro Thr Arg Asn Gln Pro Gln Ala Pro Gly
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 Val Glu Ala Ser Gly Ala Gly Glu Ala Arg Ala Ser Thr Gly Ser Ser
 355 360 365
 Asp Ser Ser Pro Gly Gly His Gly Thr Gln Val Asn Val Thr Cys Ile
 370 375 380
 Val Asn Val Cys Ser Ser Ser Asp His Ser Ser Gln Cys Ser Ser Gln
 385 390 395 400

Ala Ser Ser Thr Met Gly Asp Thr Asp Ser Ser Pro Ser Glu Ser Pro
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Lys Asp Glu Gln Val Pro Phe Ser Lys Glu Glu Cys Ala Phe Arg Ser
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Pro Pro Gln Met Cys Arg Val Ala Cys Thr Cys Ala Val Ile Asn Arg
50 55 60
Val Gln Lys Val Asn Cys Thr Pro Thr Ser Asn Ala Val Cys Gly Asp
65 70 75 80
Cys Leu Pro Arg Phe Tyr Arg Lys Thr Arg Ile Gly Gly Leu Gln Asp
85 90 95
Gln Glu Cys Ile Pro Cys Thr Lys Gln Thr Pro Thr Ser Glu Val Gln
100 105 110
Cys Ala Phe Gln Leu Ser Leu Val Glu Ala Asp Ala Pro Thr Val Pro
115 120 125
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 ctccaatggc tcagactgta cccgctgccc tgcagggact gaacctgctg tgggatttga 180
 ntacaaatgg tggaacacgc tgcccacaaa catggaaacg accgttctca gtgggatcaa 240
 cttcgagtac aagggcatga caggctggga ggtggntggt gntcacattt acacagctgc 300
 tggagcctca gacaatgact tcatgattct aaatctggtt gt 342

<210> 9
 <211> 291
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (244)
 <223> n equals a, t, g or c

<400> 9
 ctctgtgga gacgtggaaa gggtccaaag gcaaacagtc ctatacctac atcattgagg 60
 agaacactac cagagcttc acctgggcct tccagaggac cacttttcat gaggcaagca 120
 ggaagtacac caatgacgtt gccaagatct actccatcaa tgtcaccaat gttatgaatg 180
 gcgtggcctc ctactgccgt ccctgtgccc tagaagcctc tgatgtgggc tctcctgca 240
 cctnttgtcc tgctggttac tatattgacc gagattcagg aacctgccac t 291

<210> 10
<211> 267
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (41)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (171)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (207)
<223> n equals a,t,g, or c

<400> 10
ccaagatcta ctccatcaat gtcaccaatg ttatgaatgg ngtggcctcc tactgccgtc 60
cctgtgccct agaagcctct gatgtgggct cctcctgcac ctcttgctct gctgggtact 120
atattgaccg agattcagga acctgccact cctgcccccc taacacaatt ntgaaagccc 180
accagcctta tgggtgtccag gcctgtntgc cctgtggtcc agggaccaag aacaacaaga 240
tccactctct gtgctacaat gattgca 267

<210> 11
<211> 274
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (107)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (196)
<223> n equals a,t,g, or c

<400> 11
aaagaatcaa aaactagagt acaagtactc caagctggtg atgaatgcta ctctcaagga 60
ctgtgacctg ccagcagctg acagctcgcc atcatggaag gcgaggntgt agaggacgac 120
ctcatcttta ccagcaagaa gtcactcttt gggaagatca aatcatttac ctccaagagg 180
actcctgatg gatttnactc agtgccgctg aagacatcct caggaggccc agacatggac 240
ctgtgagagg cactgcctgc ctcacctgct tcct 274

<210> 12
<211> 245
<212> DNA
<213> Homo sapiens

<400> 12
ccaagccgaa aatctgtagc gaggaccttg agggggcagt gaagctgctg cctctggtgt 60
gaagaccac tgcccaccct gcaaccagg cttcttcaaa accaacaaca gcacctgcca 120
gccctgccc tatggttcct actccaatgg ctcagactgt acccgctgcc ctgcaggac 180
tgaacctgct gtgggatttg aatacaaatg gtggaacacg ctgcccacaa acatgggaaa 240
cgacc 245

<210> 13
<211> 292
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (5)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (202)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (245)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (246)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (291)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (292)
<223> n equals a,t,g, or c

<400> 13
ggcanagga atttgactca gtgccgctga agacatctc aggaggccca gacatggacc 60
tgtgagaggc actgcctgcc tcacctgcct cctcaccttg catagcacct ttgcaagcct 120
gcggggaattt ggggtgccagc atcctgcaac acccactgct gggaaatctc ttcattgtgg 180
ccttatcaga tgtttgaatt tnagatcttt ttttatagag taccctttctg 240

cttgnntcaa acctgccaaa tatacccaca ctttgtttgt aaaaaaaaaa nn

292

<210> 14
<211> 220
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (164)
<223> n equals a, t, g or c

<400> 14
atcttctttt ataggtccaa tgatgtgacc cagtcttgca gttctgggag atcaaccacc 60
atccgcgtca ggtgcagtcc acagaaaact gtccctggaa gtttgctgct gccaggaacg 120
tgctcagatg ggacctgtga tggtgcaac ttccacttcc tgtnggagag cgcggctgct 180
tgcccgtct gtcagtggc tgactacat gctatcgta 220

<210> 15
<211> 427
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (44)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (77)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (234)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (260)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (268)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (271)
<223> n equals a,t,g, or c

<220>

<221> misc_feature
 <222> (272)
 <223> n equals a,t,g, or c

 <220>
 <221> misc_feature
 <222> (275)
 <223> n equals a,t,g, or c

 <220>
 <221> misc_feature
 <222> (305)
 <223> n equals a,t,g, or c

 <220>
 <221> misc_feature
 <222> (308)
 <223> n equals a,t,g, or c

 <220>
 <221> misc_feature
 <222> (331)
 <223> n equals a,t,g, or c

 <220>
 <221> misc_feature
 <222> (353)
 <223> n equals a,t,g, or c

 <220>
 <221> misc_feature
 <222> (359)
 <223> n equals a,t,g, or c

 <220>
 <221> misc_feature
 <222> (368)
 <223> n equals a,t,g, or c

 <220>
 <221> misc_feature
 <222> (372)
 <223> n equals a,t,g, or c

 <220>
 <221> misc_feature
 <222> (381)
 <223> n equals a,t,g, or c

 <220>
 <221> misc_feature
 <222> (388)
 <223> n equals a,t,g, or c

 <220>
 <221> misc_feature
 <222> (398)
 <223> n equals a,t,g, or c

 <220>

<221> misc_feature
<222> (400)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (407)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (427)
<223> n equals a,t,g, or c

<400> 15
aattcggcag agctcagaca atgacttcat gattctcact ctgnttgtgc caggatttag 60
acctccgcag tcggtgntgg cagacacaga gaataaagag gtggccagaa tcacatttgt 120
ctttgagacc ctctgttctg tgaactgtga gctctacttc atgggtgggtg tggaattcta 180
gggaccaaca cttcctgtgg aggacgtggg aaaggttcca aagggcaaac agtnccttat 240
tacctgacat gcattgaggn aggaacantt nncnnggagg tttcaactgg ggcctttccc 300
gaggnacnac ttttttcatg gagggccaag ncaggggagt tacaacccat tgnacgttng 360
gccaaggntc tnatttccat ncaatgtnc accaatgntn atggaanggg tgttggggcc 420
ttgcttn 427

<210> 16
<211> 333
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (20)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (23)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (76)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (80)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (85)

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tctacttgna tgggtgggtgt gaaattctag gnaccaacac tcctgtggag nacgtggaaa 180
aggttccaaa ggcaaacagt cctataccta catcattgaa ggaggaacac taccacgagg 240
ttgnacctgg gcccttccan agggaccant tttcnatgag ggcaagcagg gangtacacc 300
attgagngtt gcccaggtn tattccttca atg 333

<210> 17
<211> 70
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (40)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (60)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (66)
<223> n equals a,t,g, or c

<400> 17
ggcacaggca aagattattt ctacacacac acggcctgcn atgccaacgg agagacacan 60
ctcatntaca 70

<210> 18
<211> 568
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (396)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (465)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (472)
<223> n equals a,t,g, or c

<220>
<221> misc_feature

<222> (480)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (505)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (545)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (549)
<223> n equals a,t,g, or c

<400> 18
gcttcagtgt gcttgctcat ggcataaatg ctatgtggac agcccaagcc ataccagaa 60
tcaccttaat tccaactttt tgaggttcag caattggagg tggcaattgg ctttgcattt 120
taaagtattt cgggttaaagg tgaagtgaag gattttcgtc tttataattt ctgttcggcc 180
atggcaaata ccatagttga gtatttgctt caggagagtt ctttttacag ttttactttt 240
caatgctgag gcatatttct ttgagcactg tgcttttatg tgtctttcta caaagggggt 300
attggtcagt ggaagaacaa agtacacttg ataaaaacat tttcaacata cattgagcct 360
aaacagcagt taagttgtct ctaaatgaac tagcanaaaa aaaaaatgta gtttttggtt 420
gtaaggaagg ggaggtattt cctgagaatg aatttttttt ttttnggaaa cnggtttctn 480
tccataacct tgcttggtatt ttacnggagg gaccctggga aaaaaatttt tcctccaaaa 540
ttttnaaanc cggttttgaa agggttca 568

<210> 19
<211> 554
<212> DNA
<213> Homo sapiens

<220>
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<222> (396)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (407)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (473)
<223> n equals a,t,g, or c

<220>
 <221> misc_feature
 <222> (494)
 <223> n equals a,t,g, or c

<220>
 <221> misc_feature
 <222> (541)
 <223> n equals a,t,g, or c

<220>
 <221> misc_feature
 <222> (542)
 <223> n equals a,t,g, or c

<220>
 <221> misc_feature
 <222> (548)
 <223> n equals a,t,g, or c

<400> 19

gcttcagtgt gcttgctcat ggcattgaatg ctatgtggac agcccaagcc ataccagaa 60
 tcaccttaat tccaactttt tgaggttcag caattggagg tggcaattgg ctttgcattt 120
 taaagtattt cgggttaaagg tgaagtgaag gattttcgtc tttataattt ctgttcggcc 180
 atggcaaata ccatagttga gtatttgctt caggagagtt ctttttacag ttttactttt 240
 caatgctgag gcatatttct ttgagcactg tgcttttatg tgtctttcta caaagggggtt 300
 attggtcagt ggaagaacaa agtacacttg ataaaaacat tttcaacata cattgagcct 360
 aaacagcagt taagttgtct ctaaatgaac tagcanaaaaa aaaaaangta gtttttgttt 420
 gtaaggaagg ggaggtattt cctgagaatg aatttttttt tttttggata acnggttttc 480
 tctccataaa cctngcttgg attttacagg agggaccctg ggaaaaaaat ttttcctcca 540
 nnattttnaa atcc 554

<210> 20
 <211> 310
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (83)
 <223> n equals a,t,g, or c

<400> 20
 ctgagtatgc ctctttctat tgaaatgtca attcaatccc agctttctca ccaccgttcc 60
 cctttgattc tttctcaatt gtntttttgc ctttagctcc cacctataca tctcatgctc 120
 agagaaaaac aagttcctta gaggttgat tctttattct ccaagaatct gtctgaaact 180

tgtacagcta gttcctgtcc cacaactatt aagtgggttta ttaagtacat taggcagaat 240
 gtgcacttca tcaccagggtt ctagctctgg caaaggagtg ctgtctacag caaggatttt 300
 tgcttttaga 310

<210> 21
 <211> 546
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (317)
 <223> n equals a,t,g, or c

<220>
 <221> misc_feature
 <222> (340)
 <223> n equals a,t,g, or c

<220>
 <221> misc_feature
 <222> (351)
 <223> n equals a,t,g, or c

<220>
 <221> misc_feature
 <222> (389)
 <223> n equals a,t,g, or c

<220>
 <221> misc_feature
 <222> (398)
 <223> n equals a,t,g, or c

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 <221> misc_feature
 <222> (428)
 <223> n equals a,t,g, or c

<220>
 <221> misc_feature
 <222> (429)
 <223> n equals a,t,g, or c

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 <221> misc_feature
 <222> (433)
 <223> n equals a,t,g, or c

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 <222> (452)
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<220>
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 <222> (468)
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<220>
 <221> misc_feature
 <222> (483)
 <223> n equals a,t,g, or c

<220>
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 <222> (534)
 <223> n equals a,t,g, or c

<220>
 <221> misc_feature
 <222> (541)
 <223> n equals a,t,g, or c

<400> 21
 cgcgctgagg tggatttgta ccggagtccc atttgggagc aagagccatc tactcggtccg 60
 ttaccggcct tcccaccatg gattgccaag aaaatgagta ctggggaccaa tggggacggt 120
 gtgtcacctg ccaacgggtgt ggtcctggac aggagctatc caaggattgt gggttatggag 180
 aggggtggaga tgcctactgc acagcctgcc ctctctgcag gtacaaaagc agctggggcc 240
 accacaaatg tcagagttgc atcacctgtg ctgtcatcaa tcgtgttcag aagggtccaac 300
 tgcacagcta acctctnatg ctgtctgtgg ggatgtttgn cccaagttct naccgaaaag 360
 acacgccatg ggaaggctgg caggaccang aatggccntc ccgtggcaga aagccagacc 420
 ccccaacnnc tgnaggttcc aatgtggcct tnccatttgg aagcttantg ggaaggcaga 480
 tgncaacca aagtggcccc ttcaggagg ccaaaatttg ttggcaatgg gtgnagcagc 540
 ntgcc

546

<210> 22
 <211> 474
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (308)
 <223> n equals a,t,g, or c

<220>
 <221> misc_feature
 <222> (315)
 <223> n equals a,t,g, or c

<220>
 <221> misc_feature
 <222> (333)
 <223> n equals a,t,g, or c

<220>
 <221> misc_feature

<222> (412)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (431)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (436)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (444)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (473)
<223> n equals a,t,g, or c

<400> 22
cgcgctgagg tggatttgta ccggagtccc atttgggagc aagagccatc tactcgtccg 60
ttaccggcct tcccaccatg gattgccaag aaaatgagta ctgggaccaa tggggacggg 120
gtgtcacctg ccaacgggtg ggtcctggac aggagctatc caaggattgt ggttatggag 180
aggggtggaga tgcctactgc acagcctgcc ctctctgcag tacaaaagca gctggggcca 240
ccacaaatgt cagagttgca tcacctgtgc tgtcatcaat cgtgttcaga aggttcaact 300
gcacagtnac ctctnatgct gtctgtgggg gangggttgc ccaagtttct aaccgaaaga 360
cacgccattg gaaggctgcc aggaccaagg atggcatccc gtggcacaaa gncagacccc 420
caacttctga nggtncaaaa gtgnctttcc aattggagct taatgggagg cana 474

<210> 23
<211> 24
<212> DNA
<213> Homo sapiens

<400> 23
cgcccatgga tggaccaaag tacc

24

<210> 24
<211> 24
<212> DNA
<213> Homo sapiens

<400> 24
cgcccatgga tgagtactgg gacc

24

<210> 25

<211> 34
<212> DNA
<213> Homo sapiens

<400> 25
gcagcatcta gagcggcact gagtcaaata catc

34

<210> 26
<211> 26
<212> DNA
<213> Homo sapiens

<400> 26
cgcaagcttc attcaggccc ctgctg

26

<210> 27
<211> 28
<212> DNA
<213> Homo sapiens

<400> 27
cgcggtacca tggatggacc aaagtacc

28

<210> 28
<211> 28
<212> DNA
<213> Homo sapiens

<400> 28
cgcggtacca tggatgagta ctgggacc

28

<210> 29
<211> 27
<212> DNA
<213> Homo sapiens

<400> 29
cgcggtaccg cggcactgag tcaaata

27

<210> 30
<211> 26
<212> DNA
<213> Homo sapiens

<400> 30
cgcggtaccc attcaggccc ctgctg

26

<210> 31
<211> 27
<212> DNA
<213> Homo sapiens

<400> 31
cgcggtacca tggaccaaag tacccaa

27

<210> 32
<211> 57
<212> DNA
<213> Homo sapiens

<400> 32
cgctctagat caagcgtagt ctgggacgtc gtagggtag cggcactgag tcaaatac 57

<210> 33
<211> 56
<212> DNA
<213> Homo sapiens

<400> 33
cgctctagat caagcgtagt ctgggacgtc gtagggtag attcaggccc ctgctg 56

<210> 34
<211> 33
<212> DNA
<213> Homo sapiens

<400> 34
cgcggtaccg ccatcatgga ccaaagtacc aat 33

<210> 35
<211> 27
<212> DNA
<213> Homo sapiens

<400> 35
cgcggtaccg cggcactgag tcaaatac 27

<210> 36
<211> 24
<212> DNA
<213> Homo sapiens

<400> 36
cgcggtacca tgagtactgg gacc 24

<210> 37
<211> 28
<212> DNA
<213> Homo sapiens

<400> 37
cgcggtacct tcattcaggc ccctgctg 28

<210> 38
<211> 733
<212> DNA
<213> Homo sapiens

tct tct tcc tgt aac gtg cgc cca gct tgc aca gac aaa gat tat ttc	1065
Ser Ser Ser Cys Asn Val Arg Pro Ala Cys Thr Asp Lys Asp Tyr Phe	
325 330 335	
tac aca cac acg gcc tgc gat gcc aac gga gag aca caa ctc atg tac	1113
Tyr Thr His Thr Ala Cys Asp Ala Asn Gly Glu Thr Gln Leu Met Tyr	
340 345 350	
aaa tgg gcc aag ccg aaa atc tgt agc gag gac ctt gag ggg gca gtg	1161
Lys Trp Ala Lys Pro Lys Ile Cys Ser Glu Asp Leu Glu Gly Ala Val	
355 360 365	
aag ctg cct gcc tct ggt gtg aag acc cac tgc cca ccc tgc aac cca	1209
Lys Leu Pro Ala Ser Gly Val Lys Thr His Cys Pro Pro Cys Asn Pro	
370 375 380	
ggc ttc ttc aaa acc aac aac agc acc tgc cag ccc tgc cca tat ggt	1257
Gly Phe Phe Lys Thr Asn Asn Ser Thr Cys Gln Pro Cys Pro Tyr Gly	
385 390 395 400	
tcc tac tcc aat ggc tca gac tgt acc cgc tgc cct gca ggg act gaa	1305
Ser Tyr Ser Asn Gly Ser Asp Cys Thr Arg Cys Pro Ala Gly Thr Glu	
405 410 415	
cct gct gtg gga ttt gaa tac aaa tgg tgg aac acg ctg ccc aca aac	1353
Pro Ala Val Gly Phe Glu Tyr Lys Trp Trp Asn Thr Leu Pro Thr Asn	
420 425 430	
atg gaa acg acc gtt ctc agt ggg atc aac ttc gag tac aag ggc atg	1401
Met Glu Thr Thr Val Leu Ser Gly Ile Asn Phe Glu Tyr Lys Gly Met	
435 440 445	
aca ggc tgg gag gtg gct ggt gat cac att tac aca gct gct gga gcc	1449
Thr Gly Trp Glu Val Ala Gly Asp His Ile Tyr Thr Ala Ala Gly Ala	
450 455 460	
tca gac aat gac ttc atg att ctc act ctg gtt gtg cca gga ttt aga	1497
Ser Asp Asn Asp Phe Met Ile Leu Thr Leu Val Val Pro Gly Phe Arg	
465 470 475 480	
cct ccg cag tcg gtg atg gca gac aca gag aat aaa gag gtg gcc aga	1545
Pro Pro Gln Ser Val Met Ala Asp Thr Glu Asn Lys Glu Val Ala Arg	
485 490 495	
atc aca ttt gtc ttt gag acc ctc tgt tct gtg aac tgt gag ctc tac	1593
Ile Thr Phe Val Phe Glu Thr Leu Cys Ser Val Asn Cys Glu Leu Tyr	
500 505 510	
ttc atg gtg ggt gtg aat tct agg acc aac act cct gtg gag acg tgg	1641
Phe Met Val Gly Val Asn Ser Arg Thr Asn Thr Pro Val Glu Thr Trp	
515 520 525	
aaa ggt tcc aaa ggc aaa cag tcc tat acc tac atc att gag gag aac	1689
Lys Gly Ser Lys Gly Lys Gln Ser Tyr Thr Tyr Ile Ile Glu Glu Asn	
530 535 540	
act acc acg agc ttc acc tgg gcc ttc cag agg acc act ttt cat gag	1737
Thr Thr Thr Ser Phe Thr Trp Ala Phe Gln Arg Thr Thr Phe His Glu	
545 550 555 560	

aaaaaaaaa a

<210> 40

<211> 1001

<212> PRT

<213> Homo sapiens

<400> 40

Met Ala Glu Pro Gly His Ser His His Leu Ser Ala Arg Val Arg Gly
 1 5 10 15

Arg Thr Glu Arg Arg Ile Pro Arg Leu Trp Arg Leu Leu Leu Trp Ala
 20 25 30

Gly Thr Ala Phe Gln Val Thr Gln Gly Thr Gly Pro Glu Leu His Ala
 35 40 45

Cys Lys Glu Ser Glu Tyr His Tyr Glu Tyr Thr Ala Cys Asp Ser Thr
 50 55 60

Gly Ser Arg Trp Arg Val Ala Val Pro His Thr Pro Gly Leu Cys Thr
 65 70 75 80

Ser Leu Pro Asp Pro Val Lys Gly Thr Glu Cys Ser Phe Ser Cys Asn
 85 90 95

Ala Gly Glu Phe Leu Asp Met Lys Asp Gln Ser Cys Lys Pro Cys Ala
 100 105 110

Glu Gly Arg Tyr Ser Leu Gly Thr Gly Ile Arg Phe Asp Glu Trp Asp
 115 120 125

Glu Leu Pro His Gly Phe Ala Ser Leu Ser Ala Asn Met Glu Leu Asp
 130 135 140

Asp Ser Ala Ala Glu Ser Thr Gly Asn Cys Thr Ser Ser Lys Trp Val
 145 150 155 160

Pro Arg Gly Asp Tyr Ile Ala Phe Asn Thr Asp Glu Cys Thr Ala Thr
 165 170 175

Leu Met Tyr Ala Val Asn Leu Lys Gln Ser Gly Thr Val Asn Phe Glu
 180 185 190

Tyr Tyr Tyr Pro Asp Ser Ser Ile Ile Phe Glu Phe Phe Val Gln Asn
 195 200 205

Asp Gln Cys Gln Pro Asn Ala Asp Asp Ser Arg Trp Met Lys Thr Thr
 210 215 220

Glu Lys Gly Trp Glu Phe His Ser Val Glu Leu Asn Arg Gly Asn Asn
 225 230 235 240

Val Leu Tyr Trp Arg Thr Thr Ala Phe Ser Val Trp Thr Lys Val Pro
 245 250 255

Lys Pro Val Leu Val Arg Asn Ile Ala Ile Thr Gly Val Ala Tyr Thr
 260 265 270

Ser Glu Cys Phe Pro Cys Lys Pro Gly Thr Tyr Ala Asp Lys Gln Gly
 275 280 285
 Ser Ser Phe Cys Lys Leu Cys Pro Ala Asn Ser Tyr Ser Asn Lys Gly
 290 295 300
 Glu Thr Ser Cys His Gln Cys Asp Pro Asp Lys Tyr Ser Glu Lys Gly
 305 310 315 320
 Ser Ser Ser Cys Asn Val Arg Pro Ala Cys Thr Asp Lys Asp Tyr Phe
 325 330 335
 Tyr Thr His Thr Ala Cys Asp Ala Asn Gly Glu Thr Gln Leu Met Tyr
 340 345 350
 Lys Trp Ala Lys Pro Lys Ile Cys Ser Glu Asp Leu Glu Gly Ala Val
 355 360 365
 Lys Leu Pro Ala Ser Gly Val Lys Thr His Cys Pro Pro Cys Asn Pro
 370 375 380
 Gly Phe Phe Lys Thr Asn Asn Ser Thr Cys Gln Pro Cys Pro Tyr Gly
 385 390 395 400
 Ser Tyr Ser Asn Gly Ser Asp Cys Thr Arg Cys Pro Ala Gly Thr Glu
 405 410 415
 Pro Ala Val Gly Phe Glu Tyr Lys Trp Trp Asn Thr Leu Pro Thr Asn
 420 425 430
 Met Glu Thr Thr Val Leu Ser Gly Ile Asn Phe Glu Tyr Lys Gly Met
 435 440 445
 Thr Gly Trp Glu Val Ala Gly Asp His Ile Tyr Thr Ala Ala Gly Ala
 450 455 460
 Ser Asp Asn Asp Phe Met Ile Leu Thr Leu Val Val Pro Gly Phe Arg
 465 470 475 480
 Pro Pro Gln Ser Val Met Ala Asp Thr Glu Asn Lys Glu Val Ala Arg
 485 490 495
 Ile Thr Phe Val Phe Glu Thr Leu Cys Ser Val Asn Cys Glu Leu Tyr
 500 505 510
 Phe Met Val Gly Val Asn Ser Arg Thr Asn Thr Pro Val Glu Thr Trp
 515 520 525
 Lys Gly Ser Lys Gly Lys Gln Ser Tyr Thr Tyr Ile Ile Glu Glu Asn
 530 535 540
 Thr Thr Thr Ser Phe Thr Trp Ala Phe Gln Arg Thr Thr Phe His Glu
 545 550 555 560
 Ala Ser Arg Lys Tyr Thr Asn Asp Val Ala Lys Ile Tyr Ser Ile Asn
 565 570 575
 Val Thr Asn Val Met Asn Gly Val Ala Ser Tyr Cys Arg Pro Cys Ala
 580 585 590

Leu Glu Ala Ser Asp Val Gly Ser Ser Cys Thr Ser Cys Pro Ala Gly
 595 600 605
 Tyr Tyr Ile Asp Arg Asp Ser Gly Thr Cys His Ser Cys Pro Pro Asn
 610 615 620
 Thr Ile Leu Lys Ala His Gln Pro Tyr Gly Val Gln Ala Cys Val Pro
 625 630 635 640
 Cys Gly Pro Gly Thr Lys Asn Asn Lys Ile His Ser Leu Cys Tyr Asn
 645 650 655
 Asp Cys Thr Phe Ser Arg Asn Thr Pro Thr Arg Thr Phe Asn Tyr Asn
 660 665 670
 Phe Ser Ala Leu Ala Asn Thr Val Thr Leu Ala Gly Gly Pro Ser Phe
 675 680 685
 Thr Ser Lys Gly Leu Lys Tyr Phe His His Phe Thr Leu Ser Leu Cys
 690 695 700
 Gly Asn Gln Gly Arg Lys Met Ser Val Cys Thr Asp Asn Val Thr Asp
 705 710 715 720
 Leu Arg Ile Pro Glu Gly Glu Ser Gly Phe Ser Lys Ser Ile Thr Ala
 725 730 735
 Tyr Val Cys Gln Ala Val Ile Ile Pro Pro Glu Val Thr Gly Tyr Lys
 740 745 750
 Ala Gly Val Ser Ser Gln Pro Val Ser Leu Ala Asp Arg Leu Ile Gly
 755 760 765
 Val Thr Thr Asp Met Thr Leu Asp Gly Ile Thr Ser Pro Ala Glu Leu
 770 775 780
 Phe His Leu Glu Ser Leu Gly Ile Pro Asp Val Ile Phe Phe Tyr Arg
 785 790 795 800
 Ser Asn Asp Val Thr Gln Ser Cys Ser Ser Gly Arg Ser Thr Thr Ile
 805 810 815
 Arg Val Arg Cys Ser Pro Gln Lys Thr Val Pro Gly Ser Leu Leu Leu
 820 825 830
 Pro Gly Thr Cys Ser Asp Gly Thr Cys Asp Gly Cys Asn Phe His Phe
 835 840 845
 Leu Trp Glu Ser Ala Ala Ala Cys Pro Leu Cys Ser Val Ala Asp Tyr
 850 855 860
 His Ala Ile Val Ser Ser Cys Val Ala Gly Ile Gln Lys Thr Thr Tyr
 865 870 875 880
 Val Trp Arg Glu Pro Lys Leu Cys Ser Gly Gly Ile Ser Leu Pro Glu
 885 890 895
 Gln Arg Val Thr Ile Cys Lys Thr Ile Asp Phe Trp Leu Lys Val Gly
 900 905 910

Ile Ser Ala Gly Thr Cys Thr Ala Ile Leu Leu Thr Val Leu Thr Cys
 915 920 925

Tyr Phe Trp Lys Lys Asn Gln Lys Leu Glu Tyr Lys Tyr Ser Lys Leu
 930 935 940

Val Met Asn Ala Thr Leu Lys Asp Cys Asp Leu Pro Ala Ala Asp Ser
 945 950 955 960

Cys Ala Ile Met Glu Gly Glu Asp Val Glu Asp Asp Leu Ile Phe Thr
 965 970 975

Ser Lys Asn His Ser Leu Gly Arg Ser Asn His Leu Pro Pro Arg Gly
 980 985 990

Leu Leu Met Asp Leu Thr Gln Cys Arg
 995 1000

<210> 41
 <211> 350
 <212> PRT
 <213> Homo sapiens

<400> 41
 Met Lys Ser Val Leu Tyr Ser Tyr Ile Leu Phe Leu Ser Cys Ile Ile
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Ile Asn Gly Arg Asp Val Ala Pro Tyr Ala Pro Ser Asn Gly Lys Cys
 20 25 30

Lys Asp Asn Glu Tyr Asn Arg His Asn Leu Cys Cys Leu Ser Cys Pro
 35 40 45

Pro Gly Thr Tyr Ala Ser Arg Leu Cys Asp Ser Lys Thr Asn Thr Asn
 50 55 60

Thr Gln Cys Thr Pro Cys Gly Ser Asp Thr Phe Thr Ser Arg Asn Asn
 65 70 75 80

His Leu Pro Ala Cys Leu Ser Cys Asn Gly Arg Cys Asp Ser Asn Gln
 85 90 95

Val Glu Thr Arg Ser Cys Asn Thr Thr His Asn Arg Ile Cys Asp Cys
 100 105 110

Ala Pro Gly Tyr Tyr Cys Leu Leu Lys Gly Ser Gly Cys Lys Ala Cys
 115 120 125

Val Ser Gln Thr Lys Cys Gly Ile Gly Tyr Gly Val Ser Gly His Thr
 130 135 140

Pro Thr Gly Asp Val Ile Cys Ser Pro Cys Gly Leu Gly Thr Tyr Ser
 145 150 155 160

His Thr Val Ser Ser Ala Asp Lys Cys Glu Pro Val Pro Ser Asn Thr
 165 170 175

Phe Asn Tyr Ile Asp Val Glu Ile Asn Leu Tyr Pro Val Asn Asp Thr

<210> 45
<211> 30
<212> DNA
<213> Homo sapiens

<400> 45
gcagcatcta gagcggcact gagtcaaatac

30

<210> 46
<211> 27
<212> DNA
<213> Homo sapiens

<400> 46
cgcgatcca tggctgagcc tgggcac

27

<210> 47
<211> 57
<212> DNA
<213> Homo sapiens

<400> 47
cgctctagat caagcgtagt ctgggacgct gtagggtag cggcactgag tcaaatac

57

<210> 48
<211> 342
<212> DNA
<213> Homo sapiens

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<222> (28)
<223> n equals a,t,g, or c

<220>
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<222> (31)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (40)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (181)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (276)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (282)

<223> n equals a,t,g, or c

<400> 48
ggaccttgag ggggcagtga agctgctngc ntctggtgtn aagacccact gcccaccctg 60
caaccaggc ttcttcaaaa ccaacaacag cacctgccag cctgcccac atggttccta 120
ctccaatggc tcagactgta cccgctgccc tgcagggact gaacctgctg tgggatttga 180
ntacaaatgg tggaacacgc tgcccacaaa catggaaacg accgttctca gtgggatcaa 240
cttcgagtac aagggcata caggctggga ggtgntggt gntcacattt acacagctgc 300
tggagcctca gacaatgact tcattgattt aaatctggtt gt 342

<210> 49
<211> 291
<212> DNA
<213> Homo sapiens

<220>
<221> misc_difference
<222> (244)
<223> n equals a, t, g or c

<400> 49
ctcctgtgga gacgtggaaa ggttccaaa gcaaacagtc ctatacctac atcattgagg 60
agaacactac cagcagcttc acctgggcct tccagaggac cacttttcat gaggcaagca 120
ggaagtacac caatgacgtt gccaagatct actccatcaa tgccaccaat gttatgaatg 180
gcgtggcctc ctactgccgt cctgtgccc tagaagcctc tgatgtgggc tcctcctgca 240
cctnttgtcc tgctgggttac tatattgacc gagattcagg aacctgccac t 291

<210> 50
<211> 294
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (75)
<223> n equals a, t, g or c

<400> 50
ggaacgggac cggagcttca cgctgcaaa gagtctgagt accactatga gtacacggcg 60
tgtgacagca cgggnttcca ggtggagggt cgccgtgccg cataccccgg gcctgtgcac 120
cagcctgcct gaccccgta agggcaccga gtgctccttc tcctgcaacg ccggggagtt 180
tctggatatg aaggaccagt catgtaagcc atgcgctgag ggccgctact ccctcggcac 240
aggcattcgg tttgatgagt gggatgagct tgcccatgg ctttgcagcc tttt 294

<210> 51
<211> 267
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (41)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (171)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (207)
<223> n equals a,t,g, or c

<400> 51
ccaagatcta ctccatcaat gtcaccaatg ttatgaatgg nggtggcctcc tactgccgtc 60
cctgtgccct agaagcctct gatgtgggct cctcctgcac ctcttgctct gctgggtact 120
atattgaccg agattcagga acctgccact cctgcccccc taacacaatt ntgaaagccc 180
accagcctta tgggtgtccag gcctgtntgc cctgtgggtcc agggaccaag aacaacaaga 240
tccactctct gtgctacaat gattgca 267

<210> 52
<211> 274
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (107)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (196)
<223> n equals a, t, g or c

<400> 52
aaagaatcaa aaactagagt acaagtactc caagctggtg atgaatgcta ctctcaagga 60
ctgtgacctg ccagcagctg acagctcgcc atcatggaag gcgaggntgt agaggacgac 120
ctcatcttta ccagcaagaa gtcactcttt gggaagatca aatcatttac ctccaagagg 180
actcctgatg gatttnactc agtgccgctg aagacatcct caggaggccc agacatggac 240
ctgtgagagg cactgcctgc ctcacctgct tcct 274

<210> 53

<211> 245
<212> DNA
<213> Homo sapiens

<400> 53
ccaagccgaa aatctgtagc gaggaccttg agggggcagt gaagctgctg cctctggtgt 60
gaagaccac tgcccacctt gcaaccagg cttcttcaaa accaacaaca gcacctgcca 120
gccctgcccc tatggttcct actccaatgg ctcagactgt acccgctgcc ctgcagggac 180
tgaacctgct gtgggatttg aatacaaatg gtggaacacg ctgcccacaa acatgggaaa 240
cgacc 245

<210> 54
<211> 292
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (5)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (202)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (245)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (246)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (291)
<223> n equals a, t, g or c

<220>
<221> misc_difference
<222> (292)
<223> n equals a, t, g or c

<400> 54
ggcanaggga atttgactca gtgccgctga agacatcctc aggaggccca gacatggacc 60
tgtgagaggc actgcctgcc tcacctgcct cctcaccttg catagcacct ttgcaagcct 120
gcggggaattt gggtgccagc atcctgcaac acccactgct gggaaatctc ttcattgtgg 180
ccttatcaga tgtttgaatt tnagatcttt ttttatagag tacccaaacc ctcctttctg 240

cttgnntcaa acctgccaaa tatacccaca ctttgtttgt aaaaaaaaaa nn

292

<210> 55
<211> 220
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (164)
<223> n equals a, t, g or c

<400> 55
atcttctttt ataggtccaa tgatgtgacc cagtcctgca gttctgggag atcaaccacc 60
atccgcgtca ggtgcagtcc acagaaaact gtccctggaa gtttgctgct gccaggaacg 120
tgctcagatg ggacctgtga tggctgcaac ttccacttcc tgtnggagag cgcggtgct 180
tgcccgtctt gtcagtggc tgactaccat gctatcgtca 220

<210> 56
<211> 427
<212> DNA
<213> Homo sapiens

<220>
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<222> (44)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (77)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (234)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (260)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (268)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (271)
<223> n equals a, t, g or c

<220>
<221> misc_feature

<222> (400)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (407)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (427)
<223> n equals a, t, g or c

<400> 56
aattcggcag agctcagaca atgacttcat gattctcact ctgnttgtgc caggatttag 60
acctccgcag tcggtgntgg cagacacaga gaataaagag gtggccagaa tcacatttgt 120
ctttgagacc ctctgttctg tgaactgtga gctctacttc atgggtgggtg tggaattcta 180
gggaccaaca cttcctgtgg aggacgtggg aaaggttcca aagggcaaac agtnccttat 240
tacctgacat gcattgaggn aggaacantt nncnggagg tttcaactgg ggcctttccc 300
gaggnacnac ttttttcatg gagggccaag ncaggggagt tacaacccat tgnacgttng 360
gccaaggntc tnatttccat ncaatgtnc accaatgntn atggaanggg tggtggggcc 420
ttgcttn 427

<210> 57
<211> 367
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (5)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (55)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (66)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (67)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (116)
<223> n equals a, t, g or c

[illegible][illegible][illegible][illegible][illegible][illegible][illegible]

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[illegible][illegible]

<223> n equals a, t, g or c

<220>

<221> misc_feature

<222> (307)

<223> n equals a, t, g or c

<220>

<221> misc_feature

<222> (320)

<223> n equals a, t, g or c

<400> 58

taactctggt tgtcccaggn ttnaaacctc cgcagtcggt gaatggcaga cacagagaat 60

aaagaggtgg ccagantcan attntttttt aaaaccctct gtntctgtgaa actgtgaagc 120

tctacttgna tgggtgggtgt gaaattctag gnaccaacac tcctgtggag nacgtggaaa 180

aggttccaaa ggcaaacagt cctataccta catcattgaa ggaggaacac taccacgagg 240

ttgnacctgg gcccttccan agggaccant tttcnatgag ggcaagcagg gangtacacc 300

attgagngtt gcccaggtn tattccttca atg 333

<210> 59

<211> 70

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (40)

<223> n equals a, t, g or c

<220>

<221> misc_feature

<222> (60)

<223> n equals a, t, g or c

<220>

<221> misc_feature

<222> (66)

<223> n equals a, t, g or c

<400> 59

ggcacaggca aagattattt ctacacacac acggcctgcn atgccaacgg agagacacan 60

ctcatntaca

70

<210> 60

<211> 3152

<212> DNA

<213> Homo sapiens

<400> 60

ggatttgatc cggagtccca tttgggagca agagccatct actcgccgt taccggcctt 60

cccaccatgg attgccaaga aaatgagtag tgggaccaat ggggacggtg tgacacctgc 120

caacggtgtg gtccctggaca ggagctatcc aaggattgtg gttatggaga ggggtggagat 180

gcctactggc	acagcctgcc	ctcctcgag	tacaaaagca	gctggggcca	ccacaaatgt	240
cagagttgca	tcacctgtgc	tgatcatca	cgtgttcaga	aggtcaactg	cacacctacc	300
tctaattgctg	tctgtgggga	ctgtttgcc	aggttctacc	gaaagacacg	cattggaggc	360
ctgcaggacc	aagagtgc	cccgtgcacg	aagcagaccc	ccacctctga	ggttcaatgt	420
gccttcag	tgagcttagt	ggaggcagat	gcacccacag	tgccccctca	ggaggccaca	480
cttgttgac	tggtgagcag	cctgctagt	gtgtttaccc	tggccttcc	ggggctcttc	540
ttcctctact	gcaagcagtt	cttcaacaga	cattgccagc	gtggagggtt	gctgcagttt	600
gaggctgata	aaacagcaaa	ggaggaatct	ctcttccccg	tgccaccag	caaggagacc	660
agtgtgag	cccaagtctc	ttggggccct	ggcagccttg	cccagttgtt	ctctctggac	720
tctgttccta	taccacaaca	gcagcagggg	cctgaaatgt	gatgtccaca	agagctaata	780
ccctacagat	ggggcatatc	ctatcccatc	ccaccagagg	attgattctc	catttcacaa	840
ggactgatct	ggagcatttc	ttgcttccct	gttgtagtct	ggggagccag	attccacatt	900
catgggacta	ccagacatgt	tcctagctca	acttgattat	agagaagagg	agagaggaca	960
gtgaattggg	taggggtttc	atgtctgcat	ttttggtcag	gtaagcctct	caaaattgtg	1020
ttggcacatc	tacctagcac	tttagggaca	aaatcaaacc	cttctcccc	tttagctcct	1080
ccacactgcc	tccctcctca	acacacacac	acacacatac	acacacatat	acatagacac	1140
acaaacacac	acacacacat	taatatctat	cttgggggaa	gcctcgtgcc	ataattccca	1200
agtcattgtct	cagactgctg	cattgcagca	tgacgcaggg	caaacacttt	ccctctagat	1260
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ctgagttccc	caaactaccc	cacagcagtc	cctcaaagac	agccctcaat	ccatgtaggg	1440
acatctgagt	atgcctcttt	ctattgaaat	gtcaattcaa	tcccagcttt	ctcaccaccg	1500
ttccccctttg	attctttctc	aattgtcttt	ttgccttttag	ctcccaccta	tacatctcat	1560
gctcagagaa	aaacaagttc	cttagagggt	gtattcttta	ttctccaaga	atctgtctga	1620
aacttgtaga	gctagttcct	gtcccacaa	tattaagtgg	tttattaagt	acattaggca	1680
gaatgtgcac	ttcatcacca	ggttctagct	ctggcaaaag	agtgtgtct	acagcaagat	1740
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aagcagcctg	gccccacaca	ggtattagca	aatatgtggt	aaccaagggt	ttaggccttg	1980
gscycatagg	ttcctgtttt	tttttcgtt	tggtttccgt	tttcgtttt	tgcaacaggt	2040
tattcttatc	tactggctt	tactgatca	tgtttagacc	ttctggtaga	agaaataata	2100
tccagacagg	ggatgatttg	gcttcagcag	gctgcaggtg	ttcaaagggt	gccatgtggc	2160
tggcagtggt	tcaagccac	atttgacact	gctgctctag	aggaaagata	atgatggtaa	2220
cacagtaata	ataataataa	taacaaaaat	atgataaagt	gaaagagtag	atttctttca	2280
gtgtgcttgc	tccatggcat	gaatgctatg	tggaagccc	aagccatacc	cagaatcacc	2340
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tatttcgggt	aaagggtgaag	tgaaggattt	tcgtctttat	aatttctgtt	tggccatggc	2460
aaataccata	gttgagtatt	tgcttcagga	gagttctttt	tacagtttta	cttttcaatg	2520
ctgaggcata	tttcttttgag	cactgtgctt	ttatgtgtct	ttctacaaag	gggttatttg	2580
tcagtgggaag	aacaaagtac	acttgataaa	aacattttca	acatacattg	agcctaaaca	2640
gcagttaagt	tgtctcta	gaactagcaa	aaaaaaaaaa	tgtagttttt	gtttgtaagg	2700
aaggggagg	atttcctgag	aatgaatttt	tttttttttg	gattactgtt	ttctctcca	2760
tataccttga	acttgggatt	ttgaacagga	gggaagtcc	gggaaaaata	attttttccc	2820
tccaagattc	tcagatccca	ggtaggaaa	ggattcagca	ctaacagcat	aacctctcta	2880
caacatacag	ccctgtcaca	ttgagatcat	aatccctcct	gtccactcc	tctctaccaa	2940
ccccacccta	ctagctaggt	cttcagtgtt	ttacattgaa	tattggtaca	ttttaattat	3000
tttttctcat	aaatgggtta	tttatagaga	ttttgttaac	tcttgagcca	tatgcatgtg	3060
tagatactgg	cagggctatg	tttgtttatg	atgctctgca	aacatttcat	attggccaat	3120
aaacagaaat	atatccaaaa	aaaaaaaaaa	aa			3152

<210> 61
 <211> 231
 <212> PRT
 <213> Homo sapiens

<400> 61
 Met Asp Cys Gln Glu Asn Glu Tyr Trp Asp Gln Trp Gly Arg Cys Val
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Thr Cys Gln Arg Cys Gly Pro Gly Gln Glu Leu Ser Lys Asp Cys Gly
 20 25 30
 Tyr Gly Glu Gly Gly Asp Ala Tyr Trp His Ser Leu Pro Ser Ser Gln
 35 40 45
 Tyr Lys Ser Ser Trp Gly His His Lys Cys Gln Ser Cys Ile Thr Cys
 50 55 60
 Ala Val Ile Asn Arg Val Gln Lys Val Asn Cys Thr Pro Thr Ser Asn
 65 70 75 80
 Ala Val Cys Gly Asp Cys Leu Pro Arg Phe Tyr Arg Lys Thr Arg Ile
 85 90 95
 Gly Gly Leu Gln Asp Gln Glu Cys Ile Pro Cys Thr Lys Gln Thr Pro
 100 105 110
 Thr Ser Glu Val Gln Cys Ala Phe Gln Leu Ser Leu Val Glu Ala Asp
 115 120 125
 Ala Pro Thr Val Pro Pro Gln Glu Ala Thr Leu Val Ala Leu Val Ser
 130 135 140
 Ser Leu Leu Val Val Phe Thr Leu Ala Phe Leu Gly Leu Phe Phe Leu
 145 150 155 160
 Tyr Cys Lys Gln Phe Phe Asn Arg His Cys Gln Arg Gly Gly Leu Leu
 165 170 175
 Gln Phe Glu Ala Asp Lys Thr Ala Lys Glu Glu Ser Leu Phe Pro Val
 180 185 190
 Pro Pro Ser Lys Glu Thr Ser Ala Glu Ser Gln Val Ser Trp Ala Pro
 195 200 205
 Gly Ser Leu Ala Gln Leu Phe Ser Leu Asp Ser Val Pro Ile Pro Gln
 210 215 220
 Gln Gln Gln Gly Pro Glu Met
 225 230